FIG.1

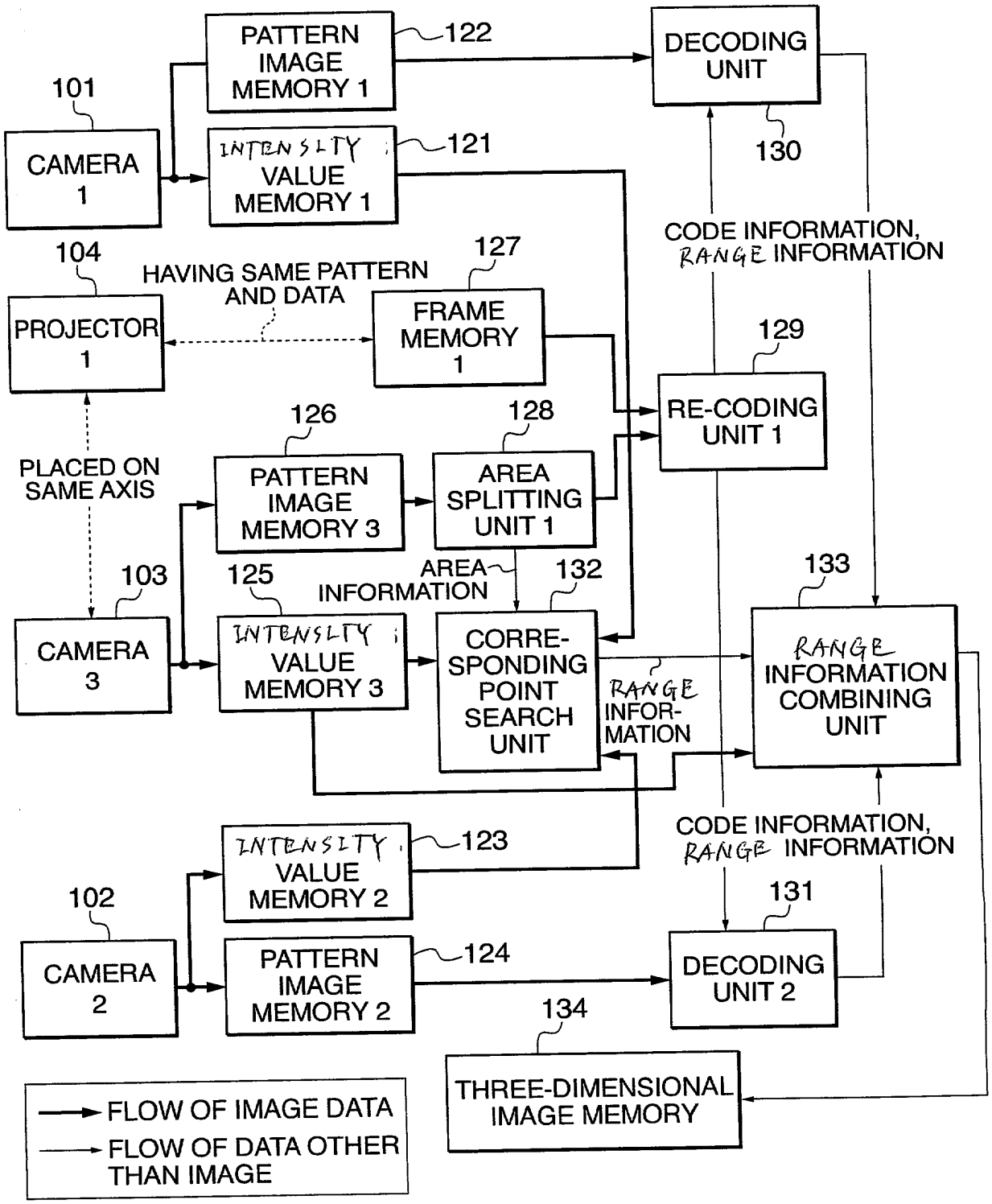

PATTERN IMAGE MEMORY 1
122
DECODING UNIT
101
CAMERA 1
INTENSITY VALUE MEMORY 1
121
130
CODE INFORMATION, RANGE INFORMATION
104
HAVING SAME PATTERN AND DATA
127
PROJECTOR 1
FRAME MEMORY 1
129
RE-CODING UNIT 1
126
128
PLACED ON SAME AXIS
PATTERN IMAGE MEMORY 3
AREA SPLITTING UNIT 1
AREA INFORMATION
103
125
132
133
CAMERA 3
INTENSITY VALUE MEMORY 3
CORRE-SPONDING POINT SEARCH UNIT
RANGE INFOR-MATION
RANGE INFORMATION COMBINING UNIT
CODE INFORMATION, RANGE INFORMATION
INTENSITY VALUE MEMORY 2
123
131
102
CAMERA 2
PATTERN IMAGE MEMORY 2
124
DECODING UNIT 2
134
THREE-DIMENSIONAL IMAGE MEMORY
FLOW OF IMAGE DATA
FLOW OF DATA OTHER THAN IMAGE

FIG.2

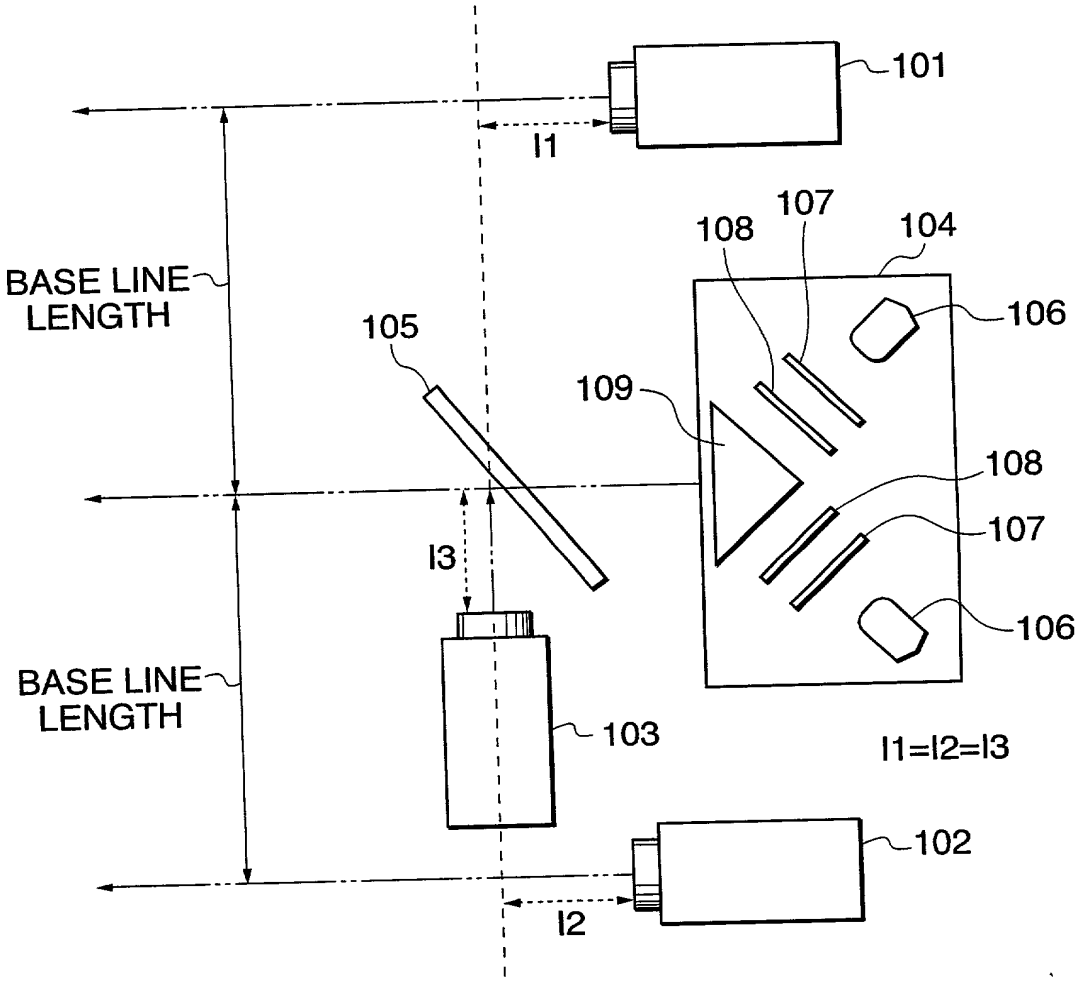

101
I1
BASE LINE LENGTH
108
107
104
106
105
109
108
107
I3
106
BASE LINE LENGTH
103
I1=I2=I3
102
I2

FIG.3

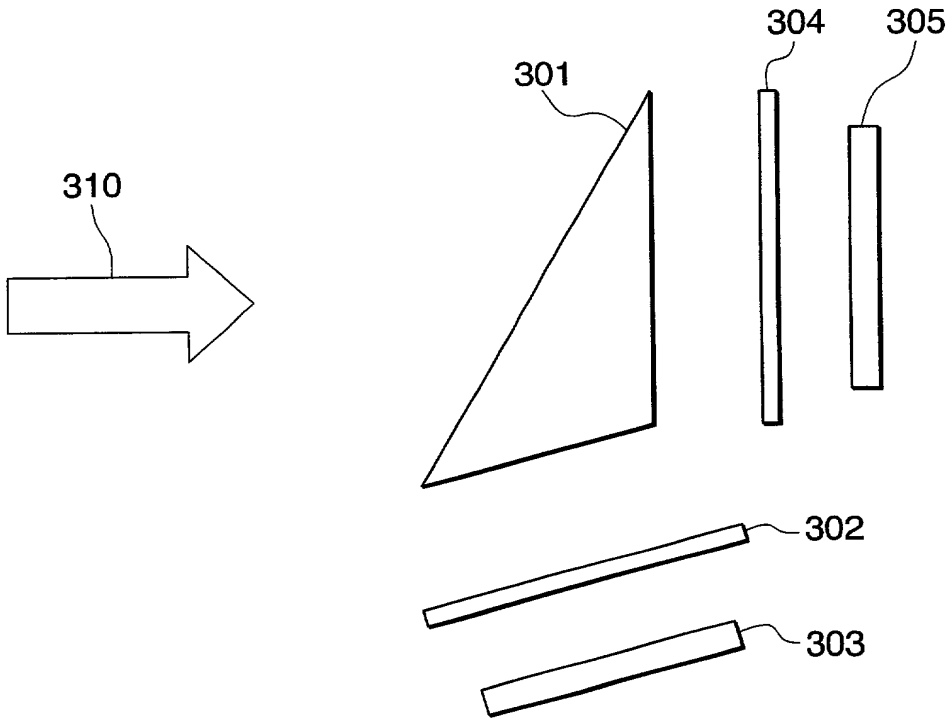


FIG.4

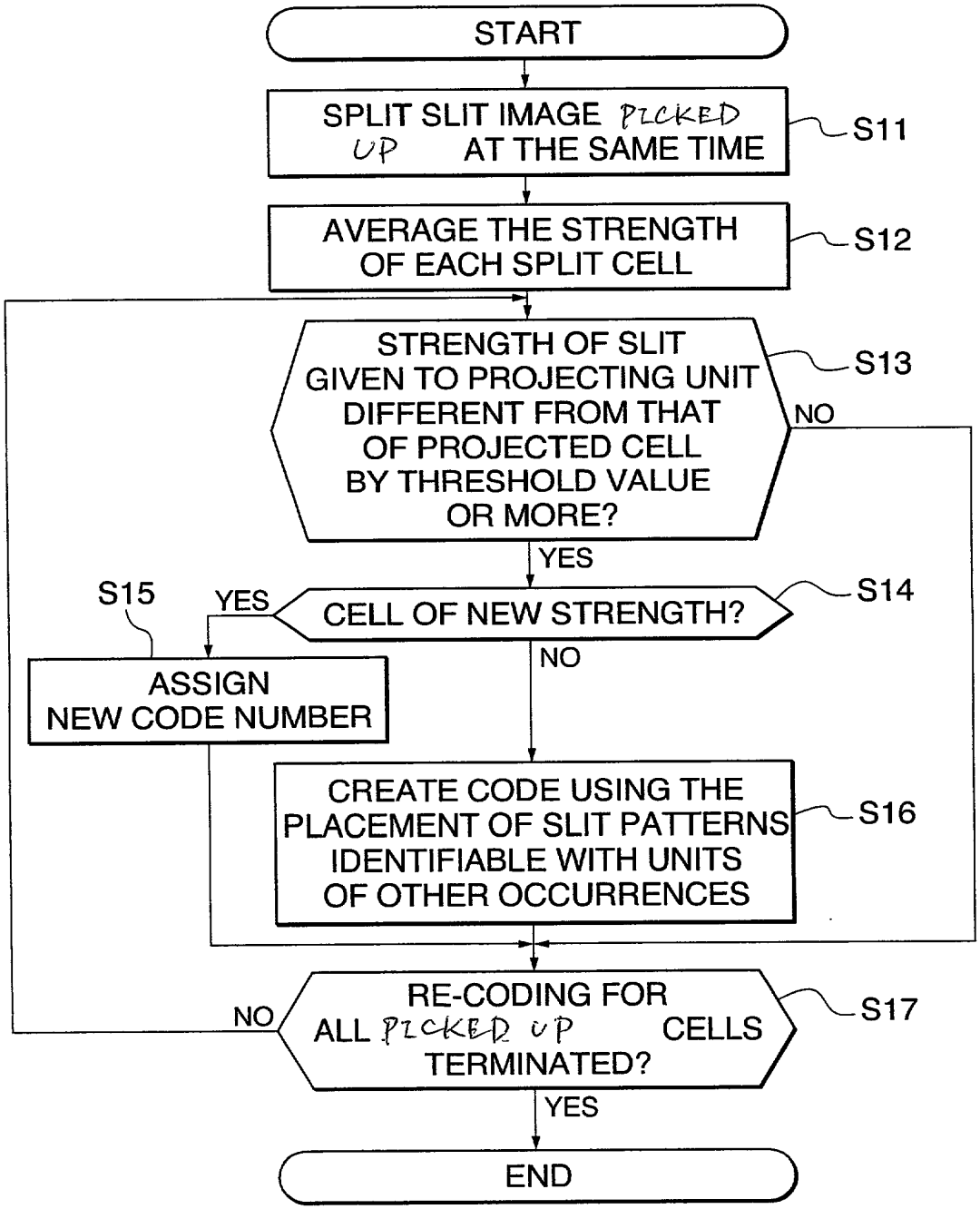

START
SPLIT SLIT IMAGE PICKED UP AT THE SAME TIME
S11
AVERAGE THE STRENGTH OF EACH SPLIT CELL
S12
STRENGTH OF SLIT GIVEN TO PROJECTING UNIT DIFFERENT FROM THAT OF PROJECTED CELL BY THRESHOLD VALUE OR MORE?
S13
NO
YES
S15
YES
CELL OF NEW STRENGTH?
S14
NO
ASSIGN NEW CODE NUMBER
CREATE CODE USING THE PLACEMENT OF SLIT PATTERNS IDENTIFIABLE WITH UNITS OF OTHER OCCURRENCES
S16
RE-CODING FOR ALL PICKED UP CELLS TERMINATED?
S17
NO
YES
END

FIG.5A

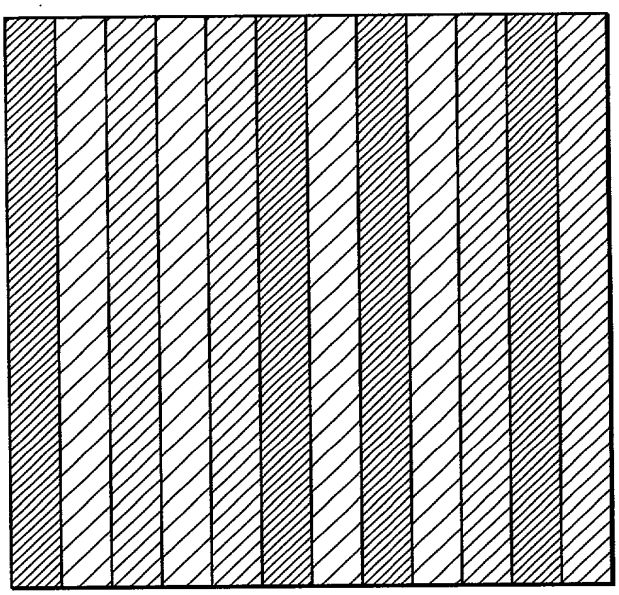


FIG.5B

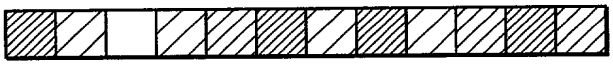


FIG.5C

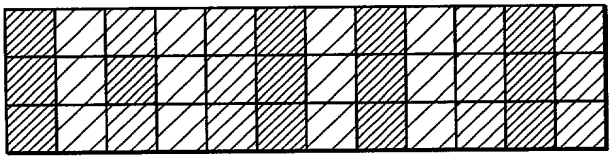


FIG.6

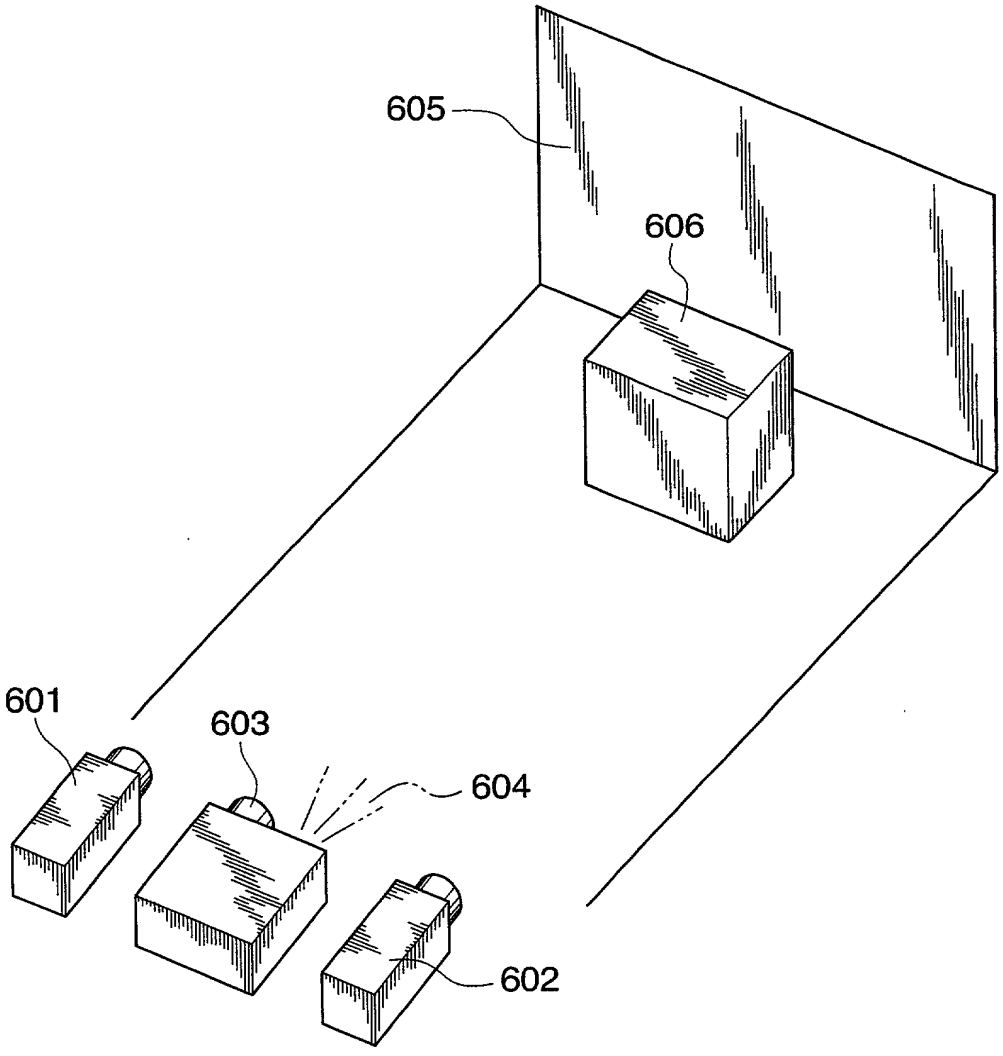


FIG.7

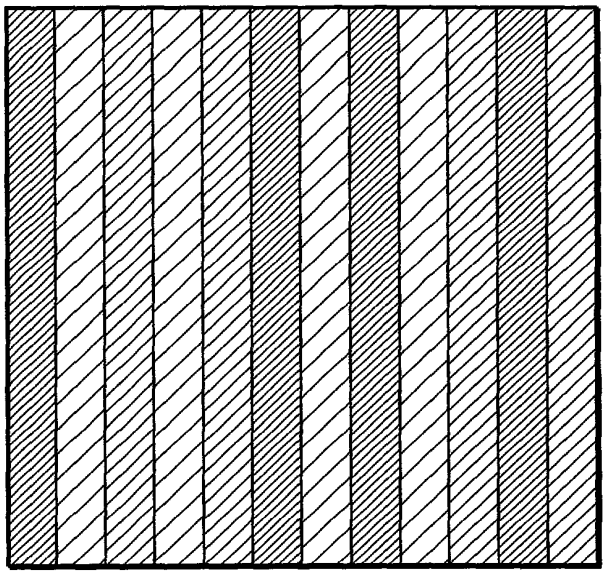


FIG.8

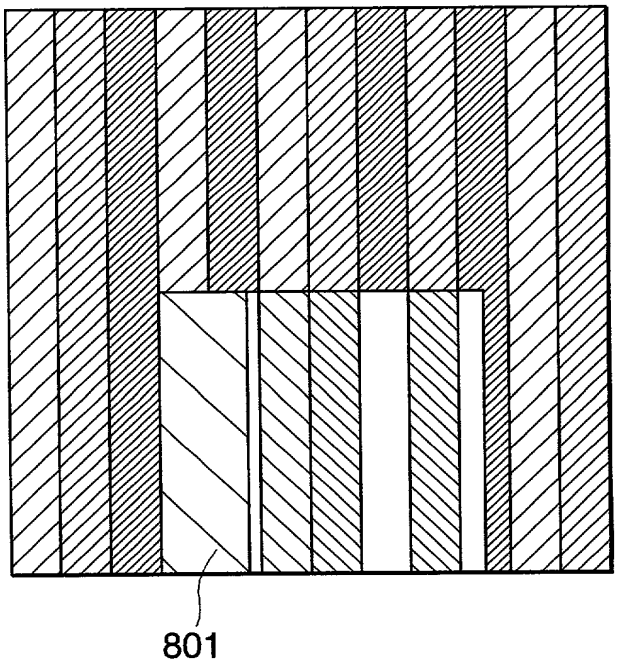


FIG.9

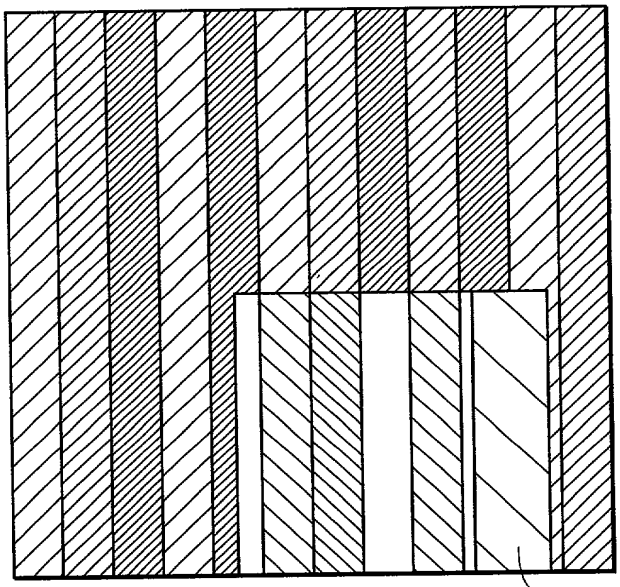


FIG.10

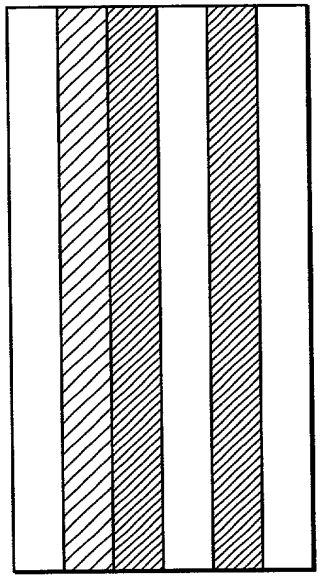


FIG.11

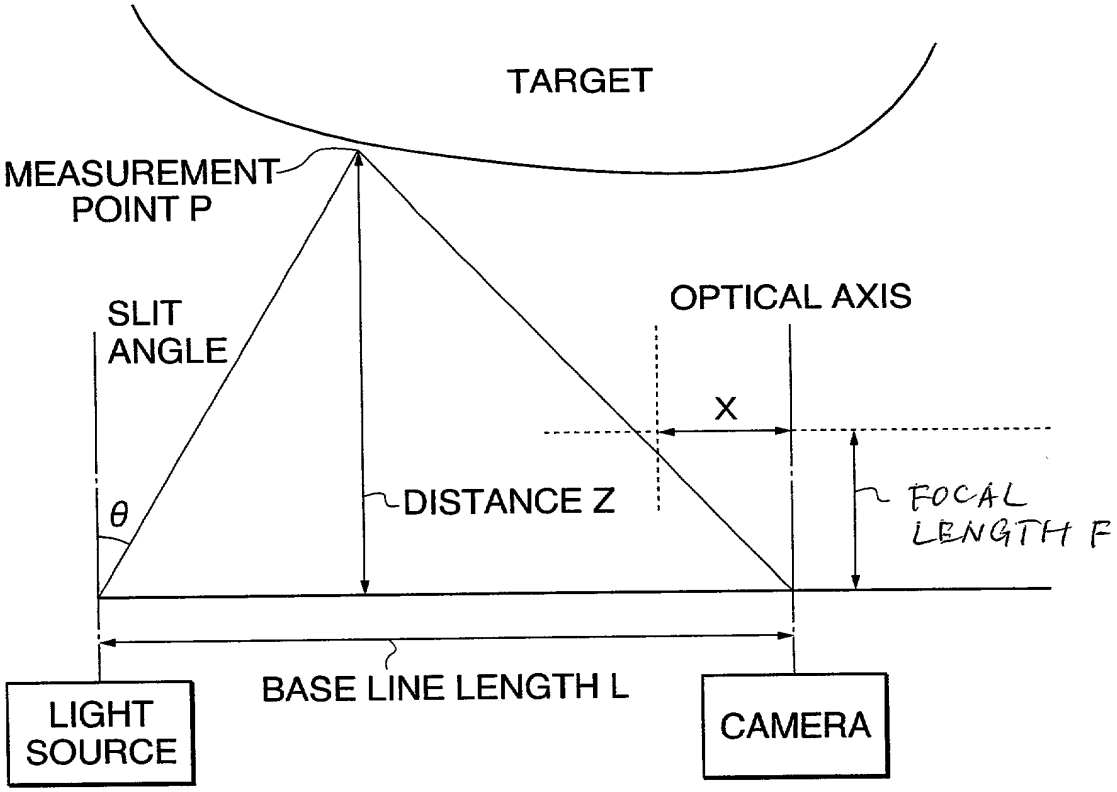

TARGET
MEASUREMENT POINT P
SLIT ANGLE
θ
OPTICAL AXIS
X
DISTANCE Z
FOCAL LENGTH F
BASE LINE LENGTH L
LIGHT SOURCE
CAMERA

FIG.12

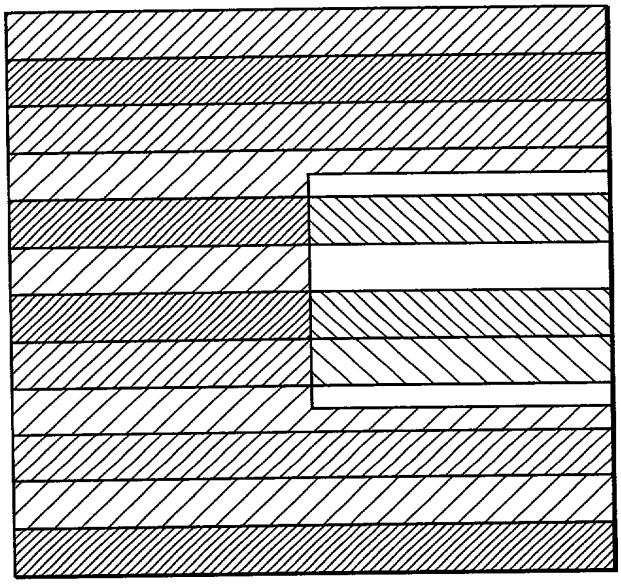


FIG.13

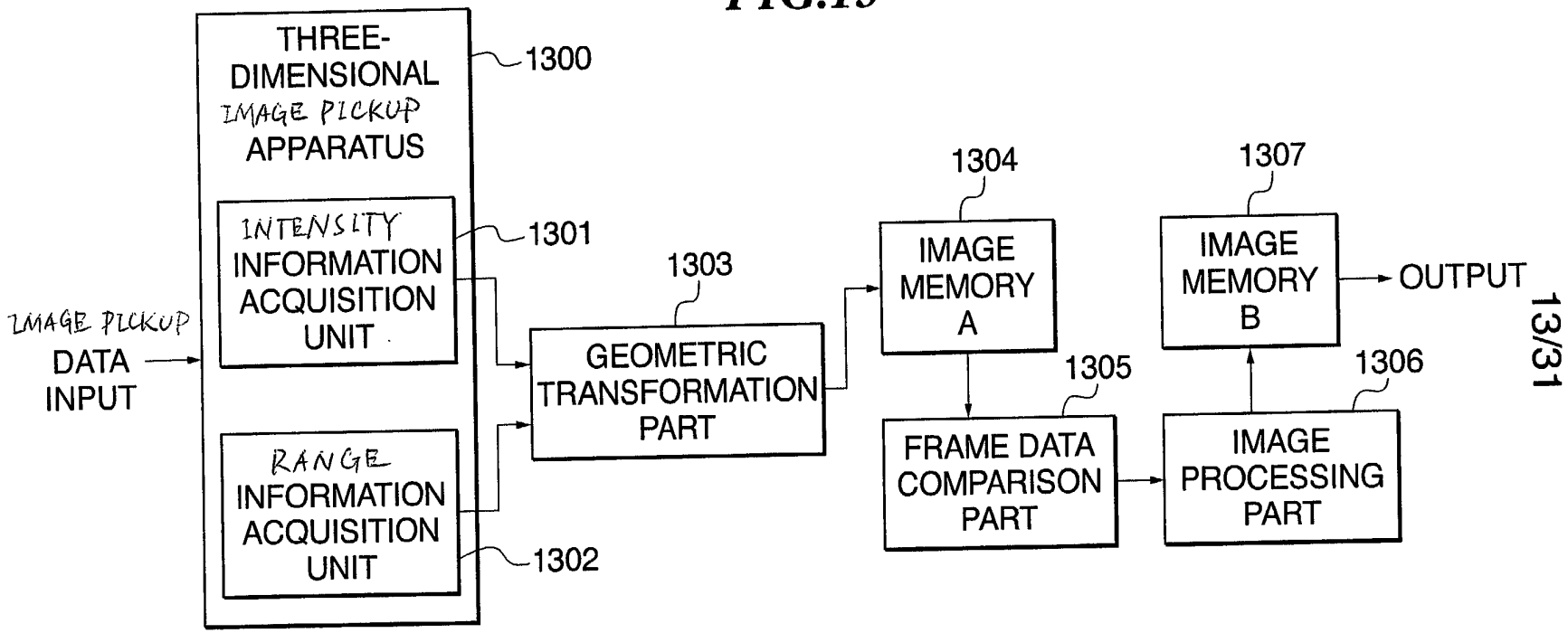

THREE-DIMENSIONAL IMAGE PICKUP APPARATUS
1300
INTENSITY INFORMATION ACQUISITION UNIT
1301
RANGE INFORMATION ACQUISITION UNIT
1302
IMAGE PICKUP DATA INPUT
1303
GEOMETRIC TRANSFORMATION PART
1304
IMAGE MEMORY A
1305
FRAME DATA COMPARISON PART
1306
IMAGE PROCESSING PART
1307
IMAGE MEMORY B
OUTPUT

FIG.14A

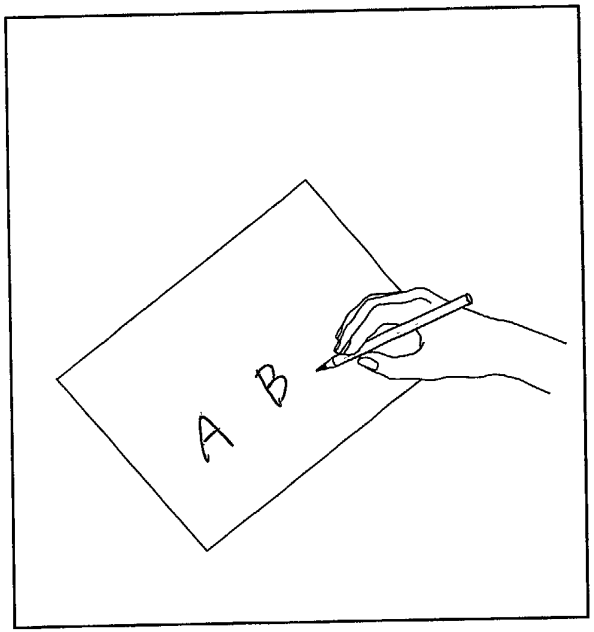


FIG.14B

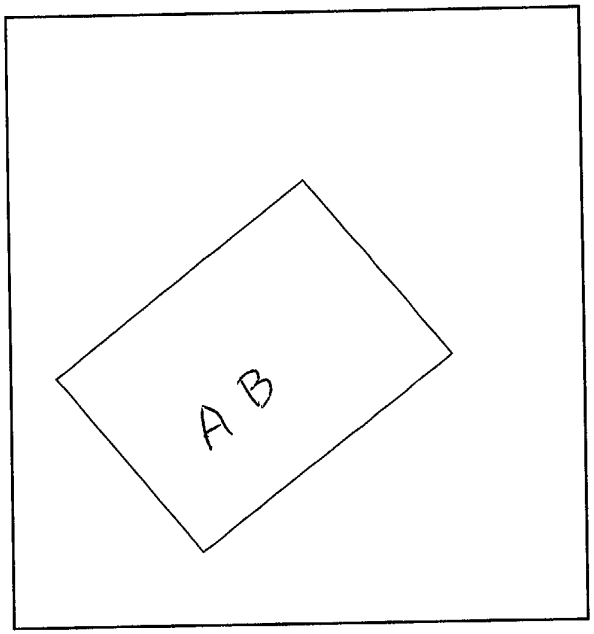


FIG.15A

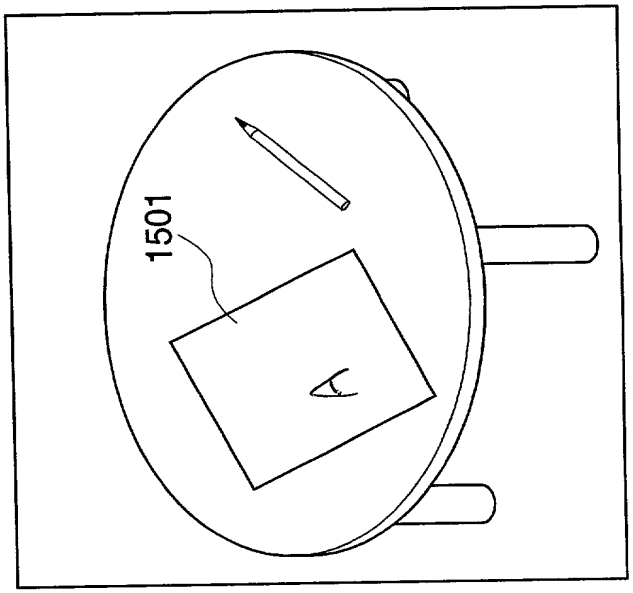


FIG.15B

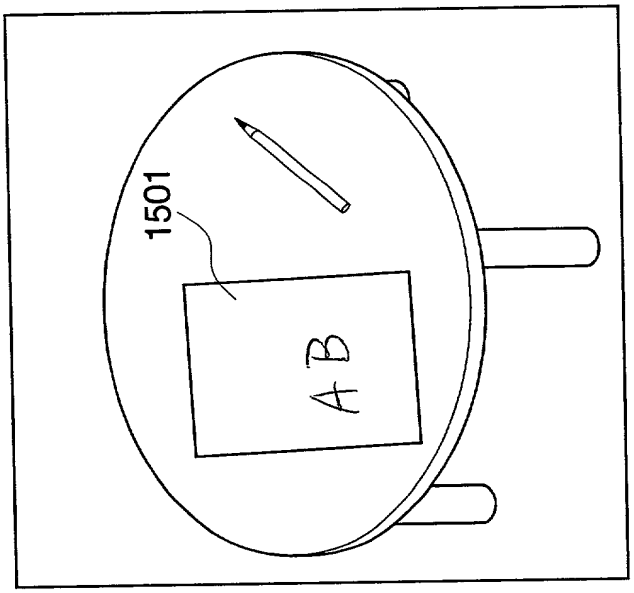


FIG.16

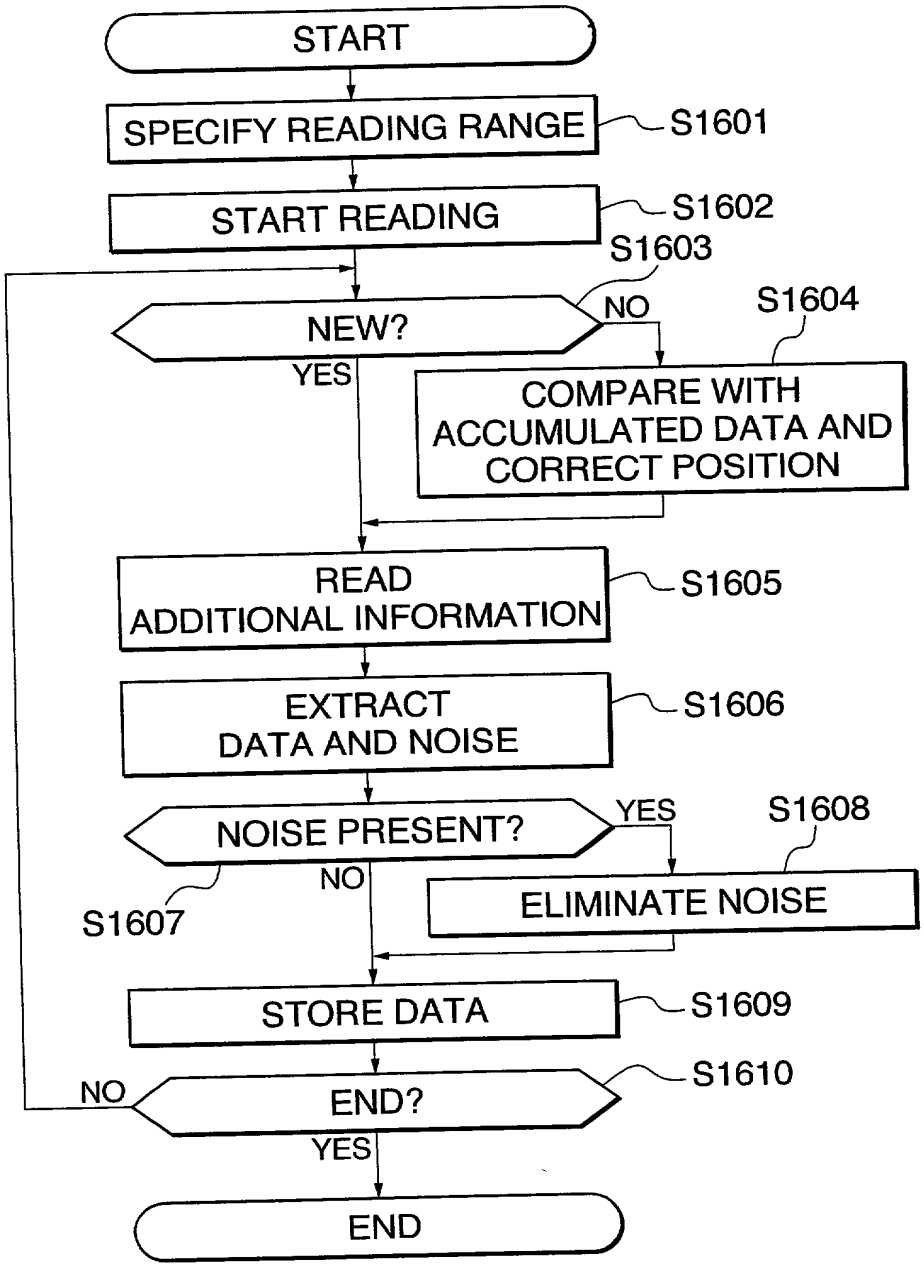

START
SPECIFY READING RANGE
S1601
START READING
S1602
S1603
NEW?
NO
S1604
YES
COMPARE WITH ACCUMULATED DATA AND CORRECT POSITION
READ ADDITIONAL INFORMATION
S1605
EXTRACT DATA AND NOISE
S1606
NOISE PRESENT?
YES
S1608
NO
S1607
ELIMINATE NOISE
STORE DATA
S1609
NO
END?
S1610
YES
END

FIG.17A

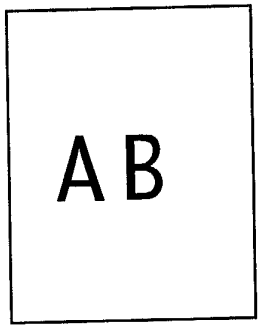


FIG.17B

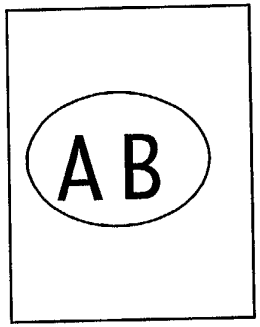


FIG.17C

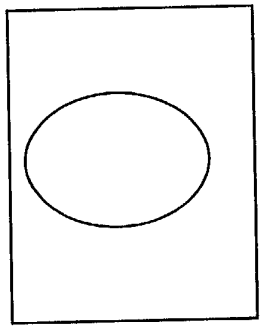


FIG.17D

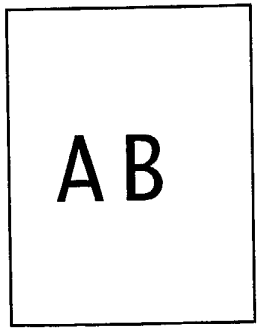


FIG.17E

A B

FIG.18

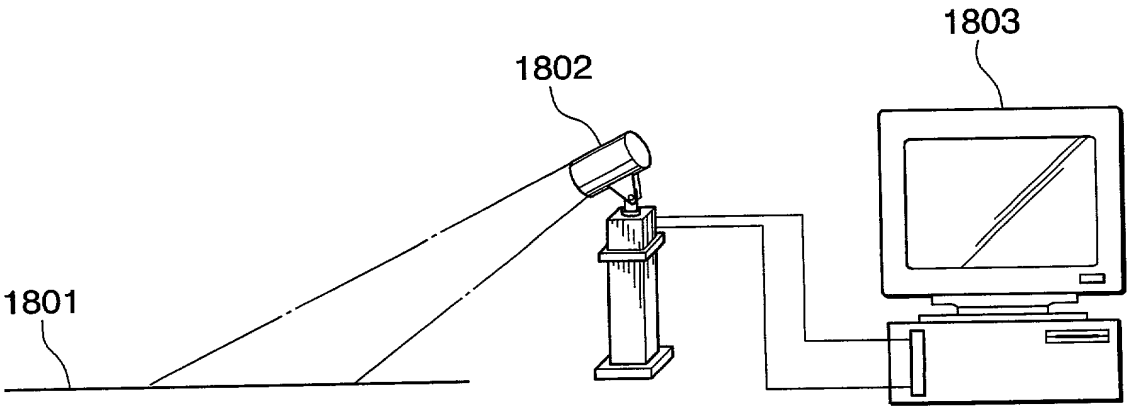


FIG.19

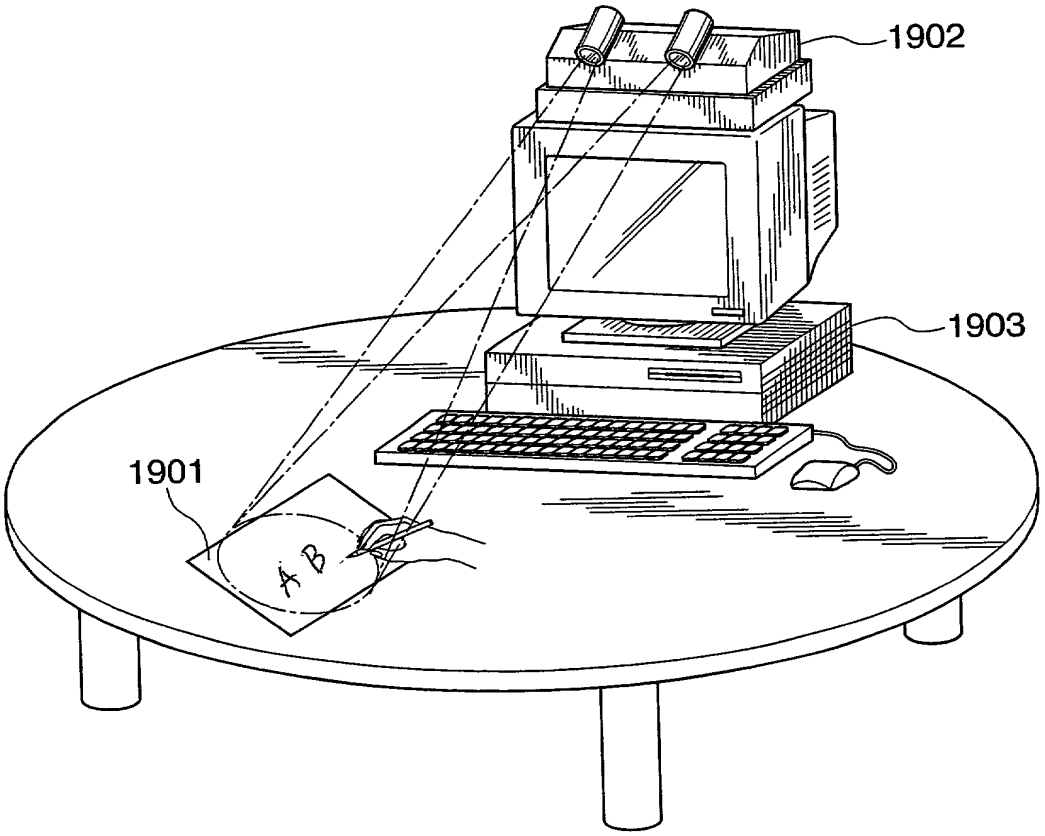


FIG.20

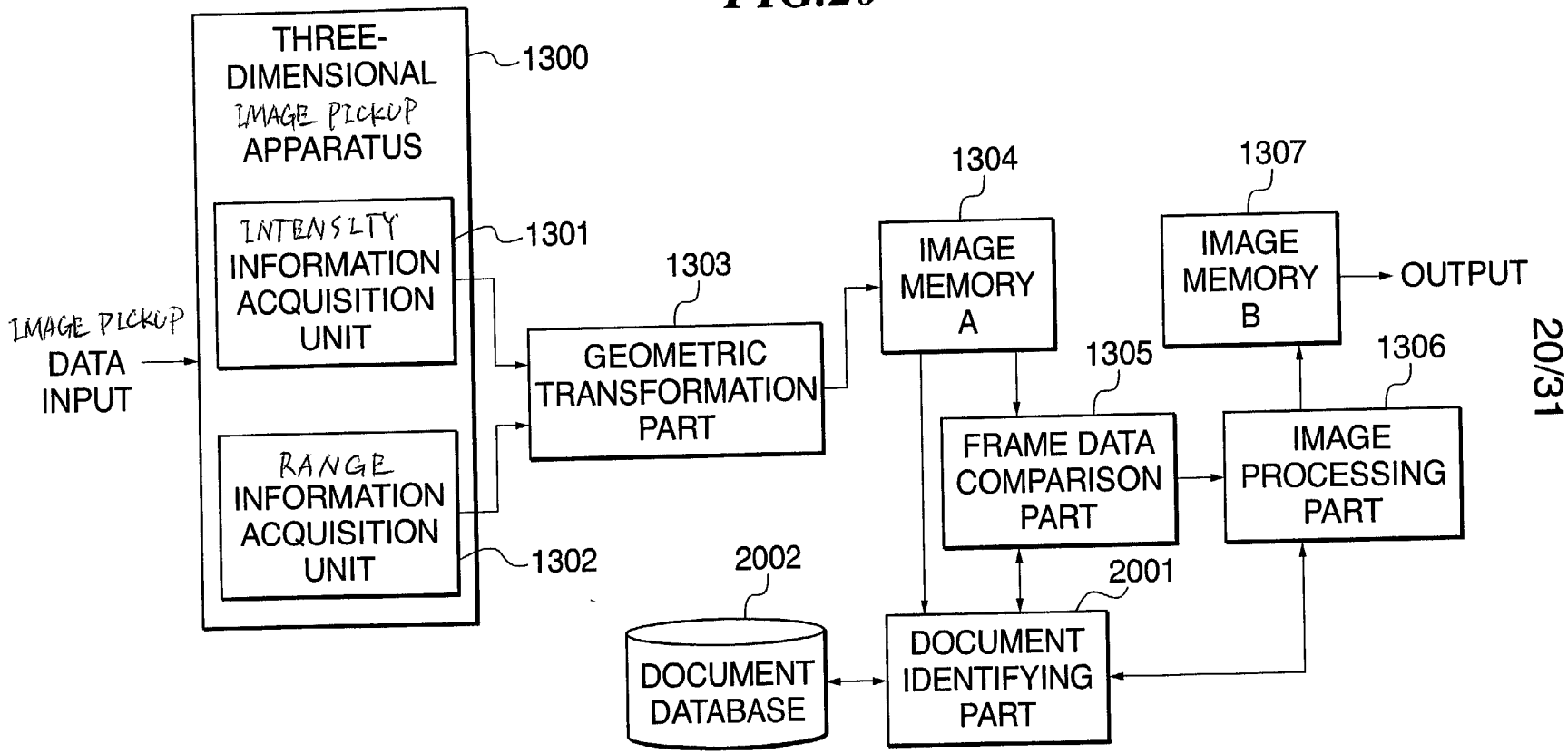

THREE-DIMENSIONAL IMAGE PICKUP APPARATUS
1300
INTENSITY INFORMATION ACQUISITION UNIT
1301
RANGE INFORMATION ACQUISITION UNIT
1302
IMAGE PICKUP DATA INPUT
GEOMETRIC TRANSFORMATION PART
1303
IMAGE MEMORY A
1304
FRAME DATA COMPARISON PART
1305
IMAGE MEMORY B
1307
IMAGE PROCESSING PART
1306
OUTPUT
DOCUMENT DATABASE
2002
DOCUMENT IDENTIFYING PART
2001

FIG.21

BUSINESS TRIP EXPENSE BILL

BELONG TO		EMPLOYEE NO.		SEAL	
CODE		NAME			

PERIOD	REGION	CLASSIFI-CATION	AFFAIR
FROM / TO / JOB END TIME :		OFFICIAL INFORMAL	

DATE	SECTION	TRAIN	TAXI	LODGING	TOTAL
/	TO	YEN	YEN	YEN	YEN
/	TO	YEN	YEN	YEN	YEN
				TOTAL EXPENSE	YEN

DAILY ALLOWANCE

YEN

CHARGE YEN

FIG.22

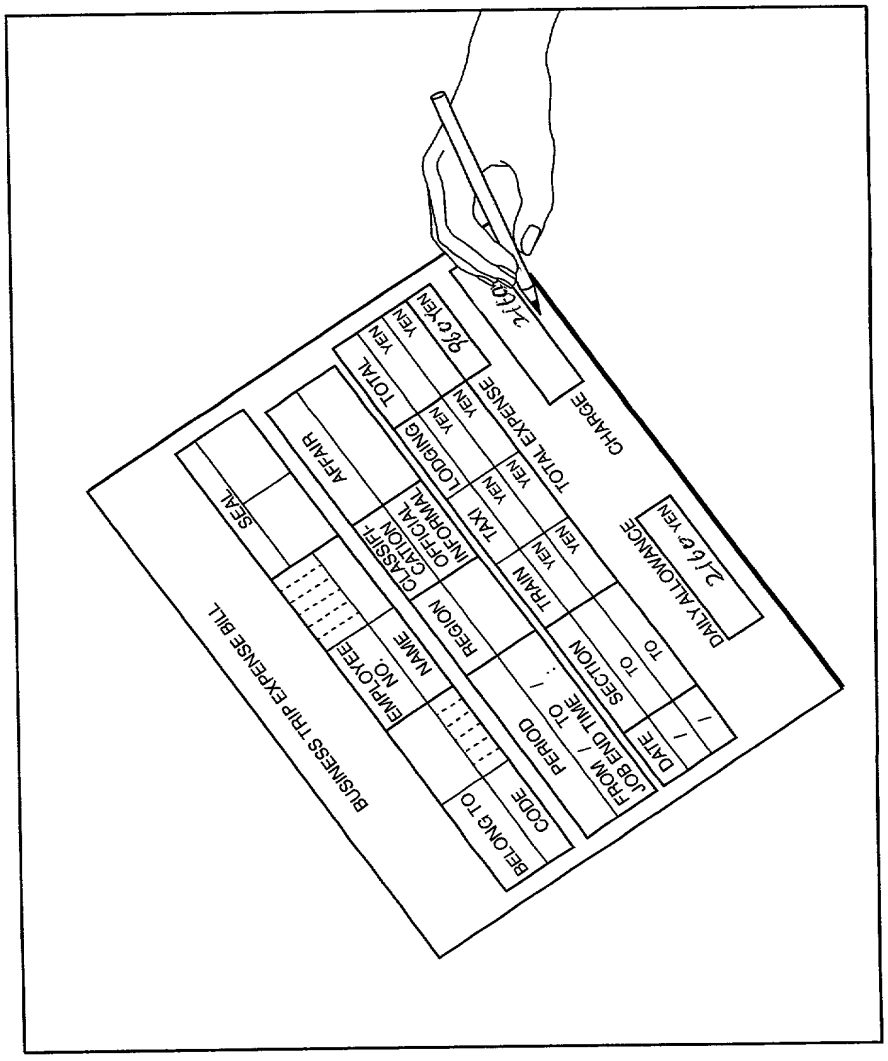

BUSINESS TRIP EXPENSE BILL
SEAL
AFFAIR
CLASSIFICATION
OFFICIAL INFORMAL
LODGING
TOTAL
TAXI
TRAIN
TOTAL EXPENSE
CHARGE
DAILY ALLOWANCE
FROM / TO
SECTION
PERIOD
REGION
NAME
EMPLOYEE NO.
BELONG TO
CODE
DATE

FIG.23

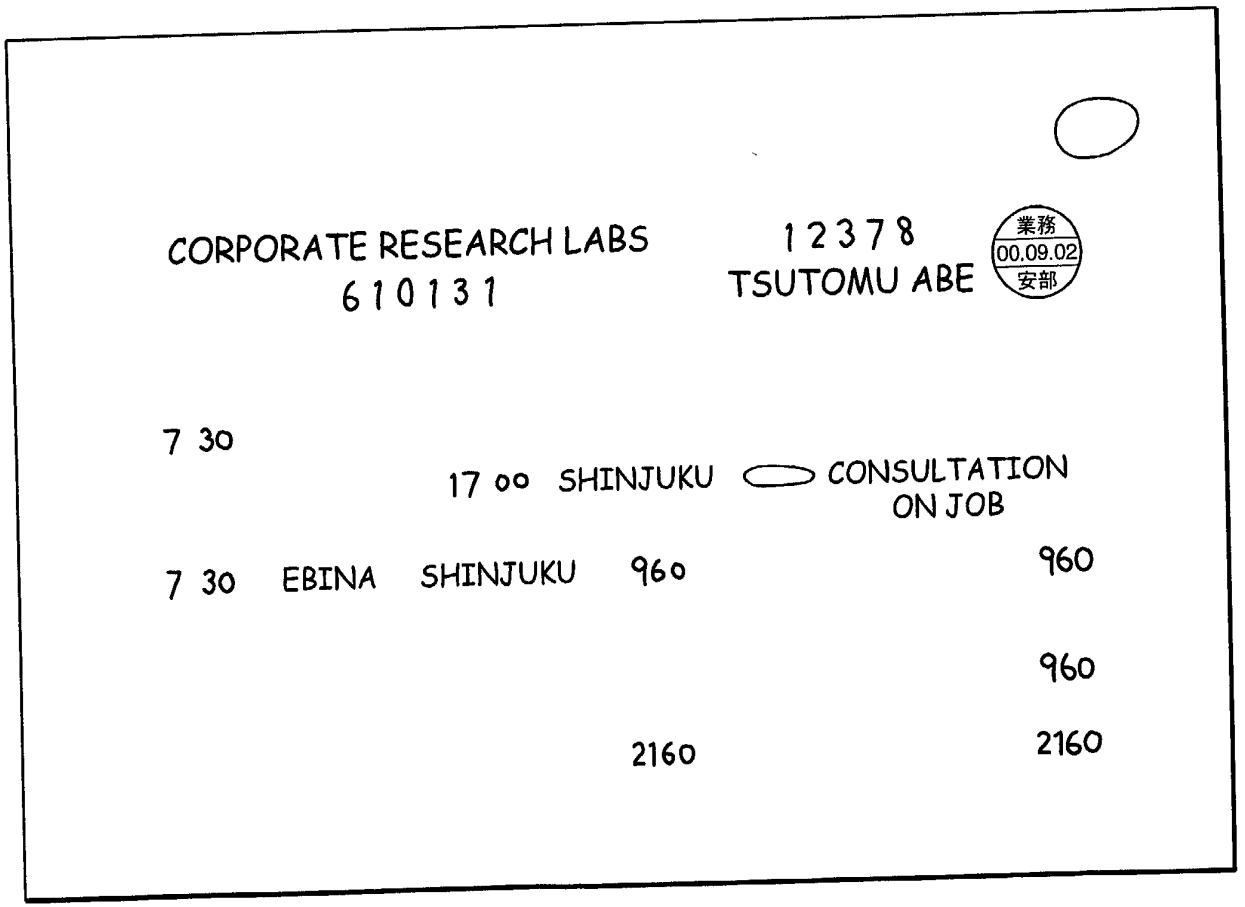

CORPORATE RESEARCH LABS
610131
12378
TSUTOMU ABE
業務
00.09.02
安部
7 30
17 00 SHINJUKU
CONSULTATION
ON JOB
7 30 EBINA SHINJUKU 960
960
960
2160
2160

FIG.24

BUSINESS TRIP EXPENSE BILL

PREPAID (SETTLE-MENT)

BELONG TO	CORPORATE RESEARCH LABS.	EMPLOYEE NO.	1 2 3 7 8	SEAL
CODE	6 1 0 1 3 1	NAME	TSUTOMU ABE	業務 00.09.02 安部

PERIOD	REGION	CLASSIFI-CATION	AFFAIR
FROM 30/7 TO / JOB END TIME 17:00	SHINJUKU	(OFFICIAL) INFORMAL	CONSULTATION ON JOB

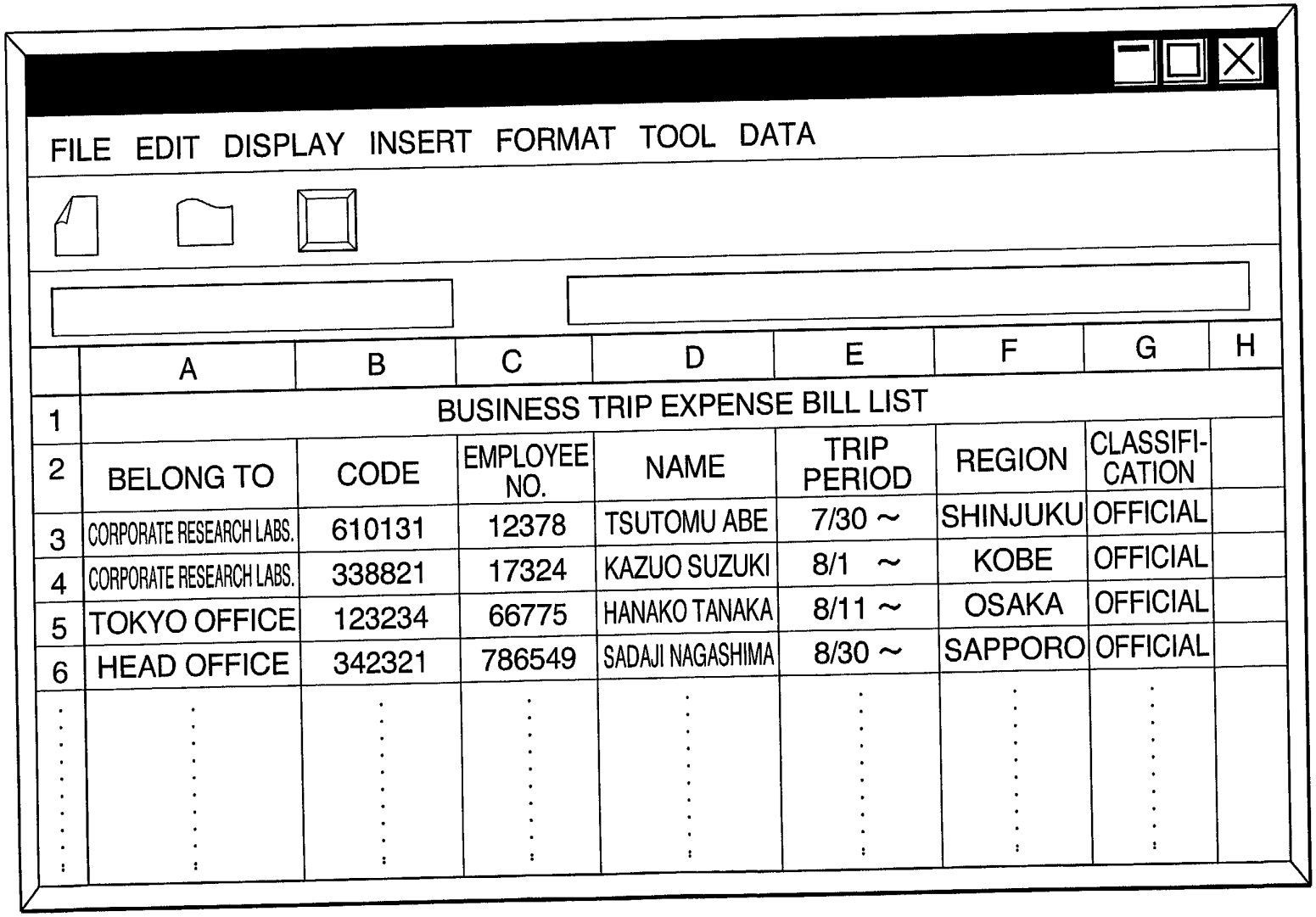
DATE	SECTION	TRAIN	TAXI	LODGING	TOTAL
7/30	EBINA TO SHINJUKU	960 YEN	YEN	YEN	960 YEN
/	TO	YEN	YEN	YEN	YEN
				TOTAL EXPENSE	960 YEN

DAILY ALLOWANCE

2160 YEN

CHARGE 2160 YEN

FIG.25



FILE EDIT DISPLAY INSERT FORMAT TOOL DATA

	A	B	C	D	E	F	G	H
1	BUSINESS TRIP EXPENSE BILL LIST							
2	BELONG TO	CODE	EMPLOYEE NO.	NAME	TRIP PERIOD	REGION	CLASSIFI-CATION	
3	CORPORATE RESEARCH LABS.	610131	12378	TSUTOMU ABE	7/30 ~	SHINJUKU	OFFICIAL	
4	CORPORATE RESEARCH LABS.	338821	17324	KAZUO SUZUKI	8/1 ~	KOBE	OFFICIAL	
5	TOKYO OFFICE	123234	66775	HANAKO TANAKA	8/11 ~	OSAKA	OFFICIAL	
6	HEAD OFFICE	342321	786549	SADAJI NAGASHIMA	8/30 ~	SAPPORO	OFFICIAL	
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	

FIG.26

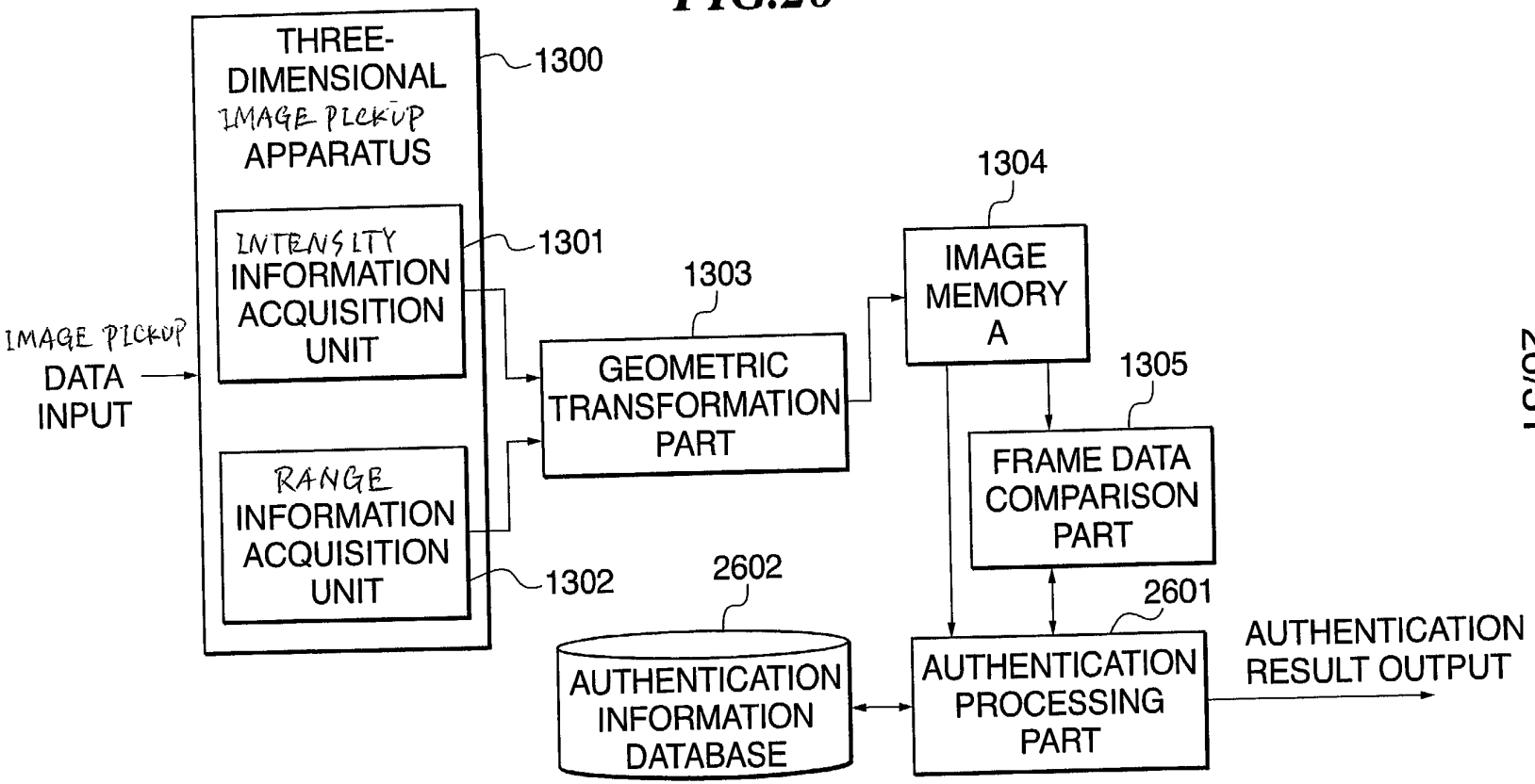
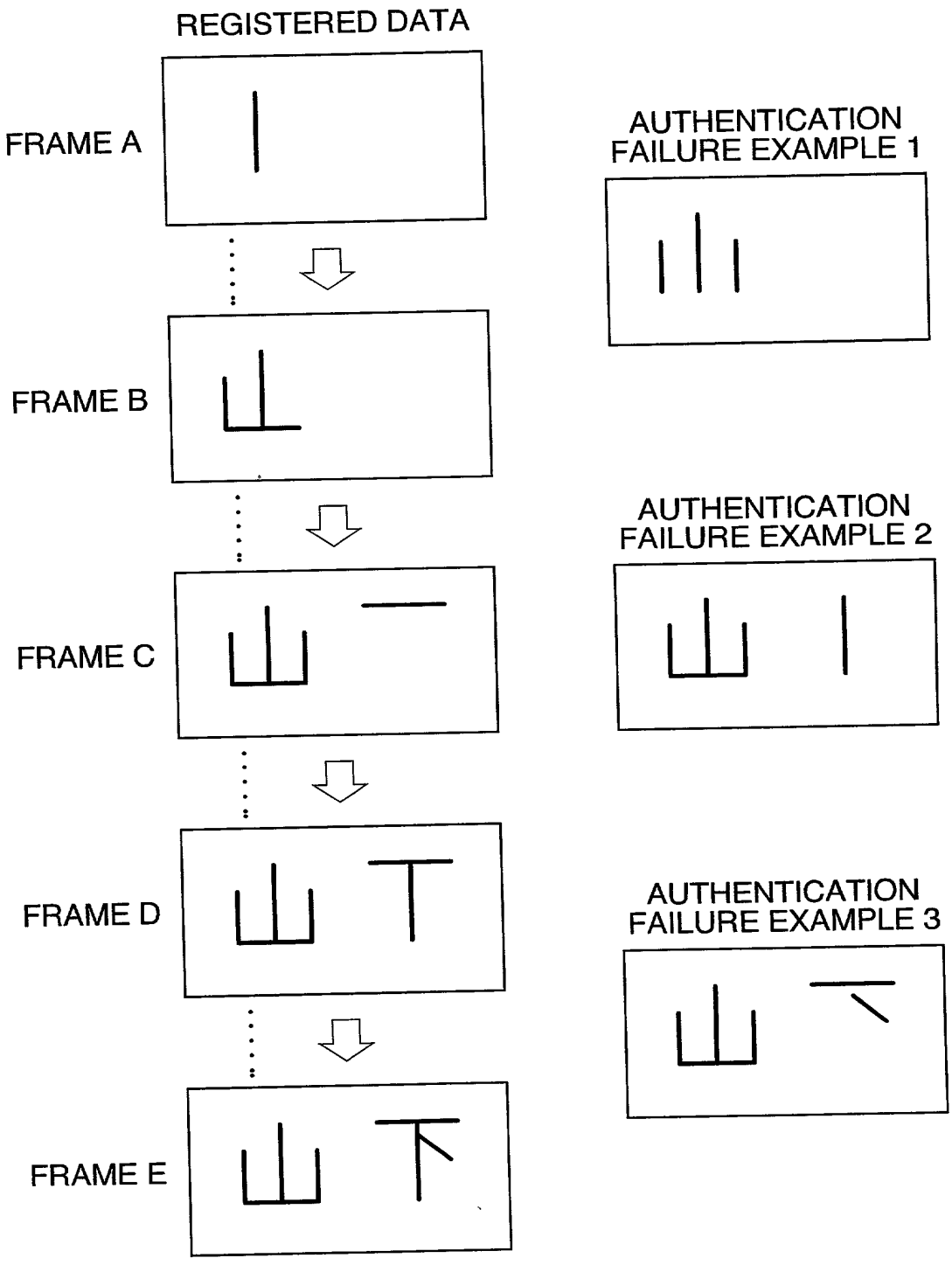

THREE-DIMENSIONAL IMAGE PICKUP APPARATUS
1300
INTENSITY INFORMATION ACQUISITION UNIT
1301
RANGE INFORMATION ACQUISITION UNIT
1302
IMAGE PICKUP DATA INPUT
1303
GEOMETRIC TRANSFORMATION PART
1304
IMAGE MEMORY A
1305
FRAME DATA COMPARISON PART
2601
AUTHENTICATION PROCESSING PART
2602
AUTHENTICATION INFORMATION DATABASE
AUTHENTICATION RESULT OUTPUT

FIG.27


REGISTERED DATA
FRAME A
FRAME B
FRAME C
FRAME D
FRAME E
AUTHENTICATION FAILURE EXAMPLE 1
AUTHENTICATION FAILURE EXAMPLE 2
AUTHENTICATION FAILURE EXAMPLE 3

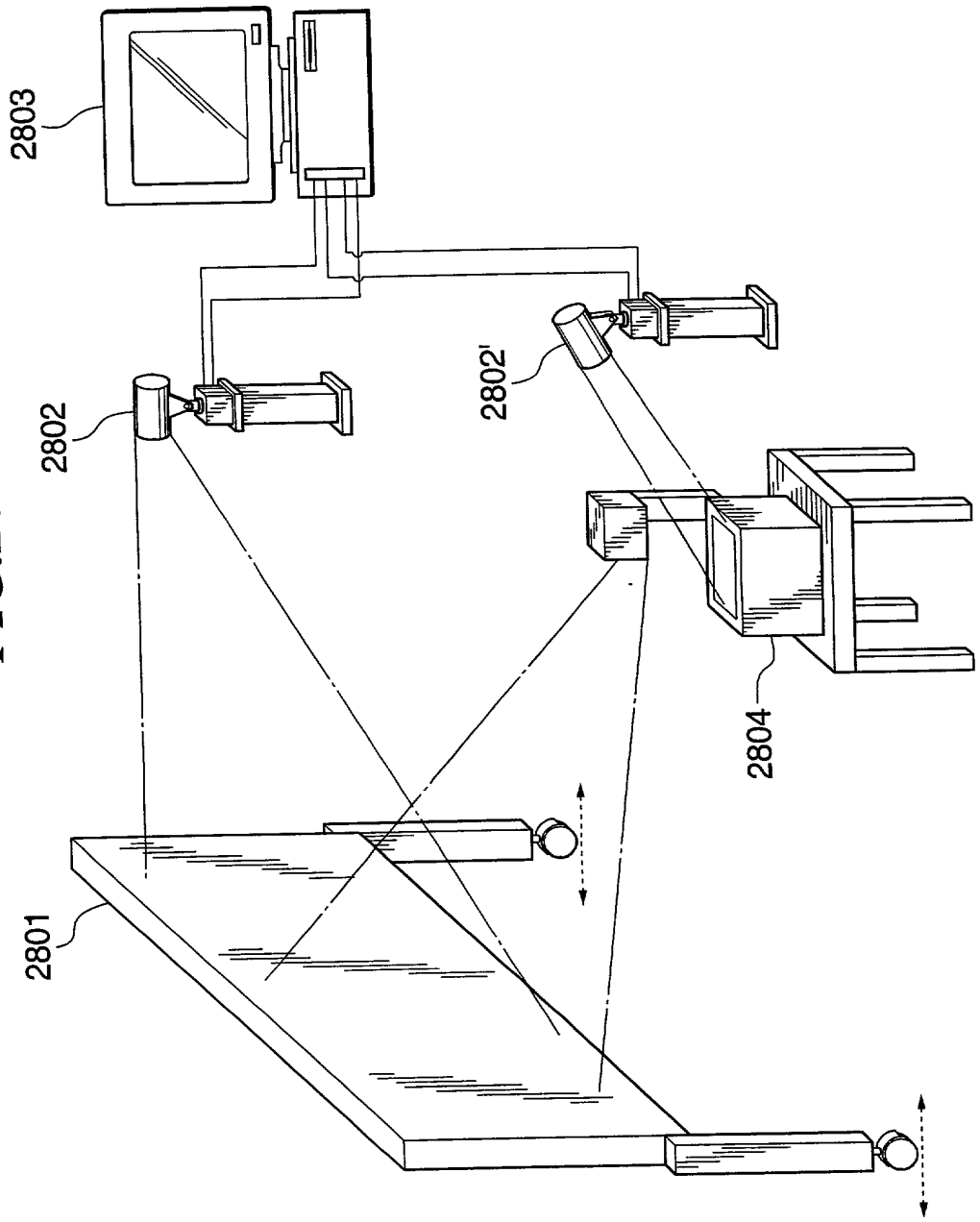
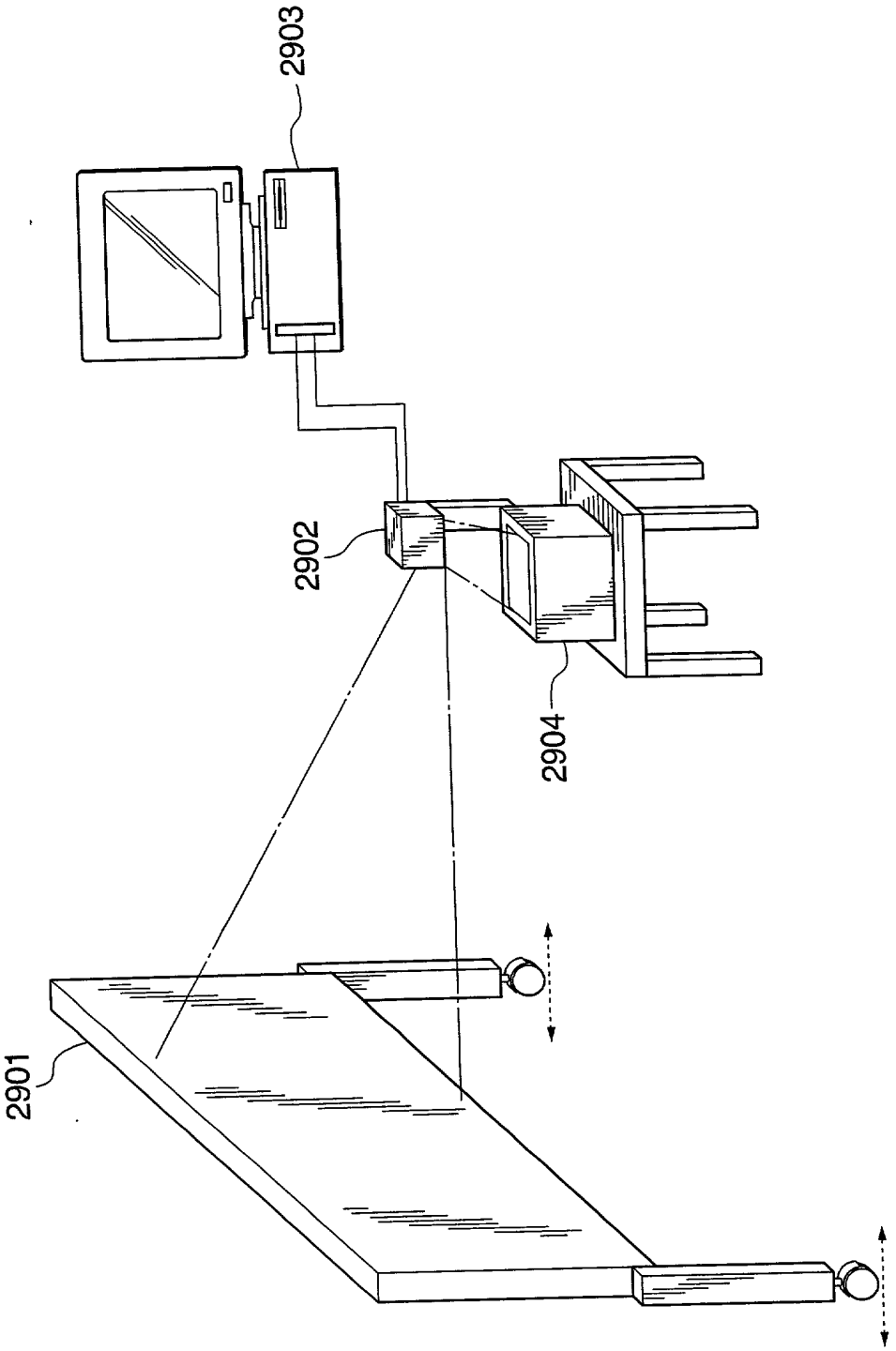


FIG.28

FIG.29



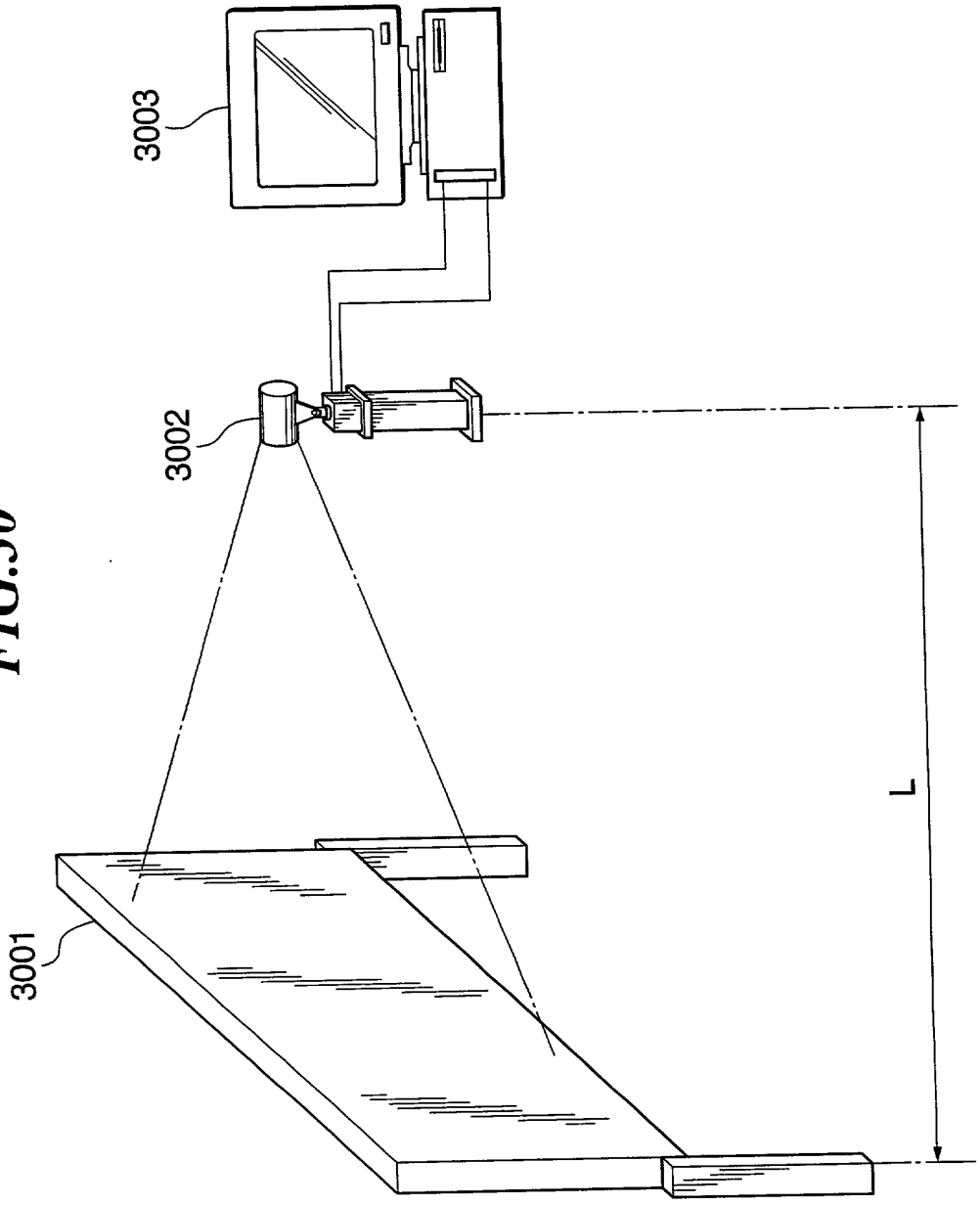


FIG.30

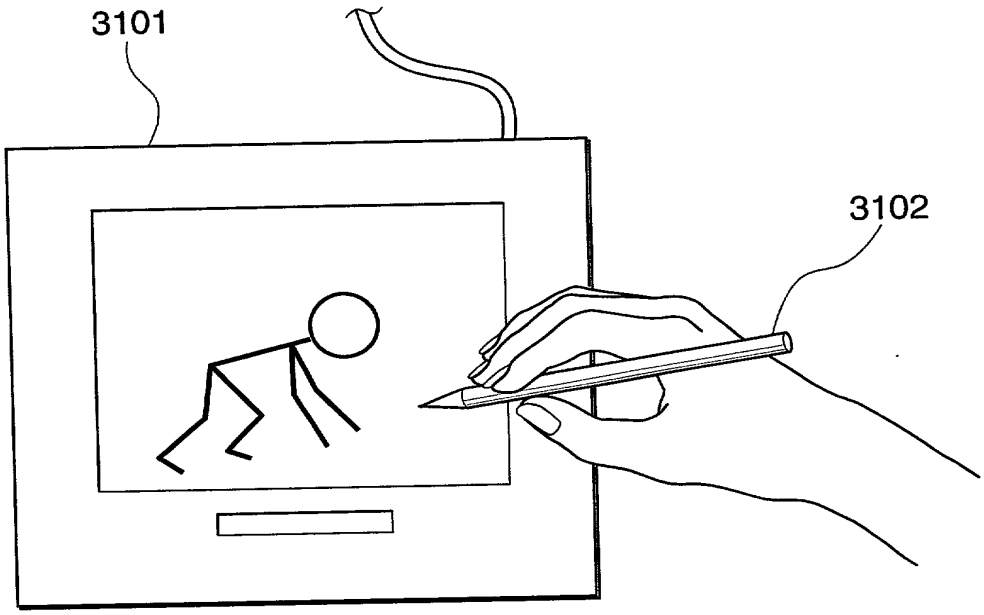



FIG.31